Space Weather Forecast

Issued on Thursday 26 September 2024 at 13:18 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of Moderate flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate with one Moderate flare observed at 26/2312 UTC from a small sunspot in the southwest. There are eleven sunspot regions visible , however these are all relatively small and simple regions with only limited development. The largest region a relatively simple region in the southeast, however the main growth is associated with a new very small region in the northeast. Two further new regions are visible on the east limb, while two regions in the northwest are becoming harder to observe.

There were no Earth-directed CMEs (coronal mass ejections) .

Solar Wind / Geomagnetic Activity: Fast wind conditions eased, with observed speeds decreasing from elevated at 500-550km/s to be slightly elevated at just over 400 km/s. Interplanetary Magnetic Field was Moderate at first but soon eased to be Weak 25/1400 UTC. The north-south component was Moderate southward (negative) at first but eased to be mainly weakly southward. Only brief periods of weakly northward (positive) field occurred. Geomagnetic activity was Unsettled to Active (Kp 3-4) until 26/0600 UTC, then Quiet (Kp 1-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no Solar Radiation Storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is expected, with a chance of further isolated Moderate flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs, with the previous anticipated CME arrival likely having missed, although a very late arrival is not ruled out later day 1 (26 Sep). Current slightly elevated winds are expected to ease to background before the next enhancement either late day 3 or day 4 (28-29 Sep), from the arrival of faster winds from a small coronal hole, although this is low confidence. Mainly Quiet geomagnetic activity expected with Unsettled intervals, but with a chance of Active to G1 Minor Storm day 1 (26 Sep), should any late CME arrival occur, and a chance for a spell of Unsettled to Active spells from any fast wind enhancement late day 3-4 (28-29 Sep).

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with just a very slight chance of solar radiation storms occurring.

Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	5	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	Yes	50	50	50	50
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.